In celebration of Women's History Month, Lab recognizes notable firsts by Los Alamos women

March 24, 2016

Women scientists and engineers make notable firsts at the Laboratory

To celebrate women in science during March's national Women's History Month, we take a look at remarkable "firsts" women have set in science and engineering here at the Laboratory.

Today, as more women enter the science, technology, engineering, and math (STEM) fields, Los Alamos has seen a steady increase in women in scientific positions across Laboratory divisions and in management positions, with great strides made recently in the numbers of women in postdoc and student positions—the Laboratory's next-generation workforce.

Jane Hall

Jane Hall was one of the first women in Laboratory management during World War II.

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Jane Hall arrived in Los Alamos in 1945 after receiving a doctorate in physics from the University of Chicago and working for the Manhattan Project in Chicago and Hanford, Washington. She spent 25 years researching plutonium reactors, crystallography, X-ray medical research, neutron physics and cosmic rays. She was appointed Associate Laboratory Director during Norris Bradbury's term, one of the first women who moved into management positions during and shortly after the war. In 1966, President Lyndon Johnson appointed Hall to the General Advisory Committee of the Atomic Energy Commission.

Frances Dunne

Frances Dunne was part of the assembly crew for the world's first nuclear explosion test, Trinity, on July 16, 1945.

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Frances Dunne answered the call to serve the nation by leaving Swarthmore College to work as an aircraft mechanic at Kirtland Air Force Base in Albuquerque. She was

recruited for Project Y and became the only woman at Los Alamos to field-test mock bomb assemblies as an explosives technician. Her small hands and manual dexterity were key considerations in this unusual profession because she could adjust the trigger in the high-explosive shells of model weapons better than her male counterparts. Dunne was part of the assembly crew for the world's first nuclear explosion test, Trinity, on July 16, 1945. After World War II, she worked for the FBI.

Jane Heydorn

Jane Heydorn holds the distinction of being the first and last operator of "Clementine," the world's first fast neutron nuclear reactor.

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As part of her work at Los Alamos, **Jane Heydorn** holds the distinction of being the first and last operator of "Clementine," the world's first fast neutron nuclear reactor, used primarily from 1946 to 1950. Previously she operated the world's third reactor designed by Enrico Fermi, code named "Water Boiler." Heydorn enlisted in the Women's Army Corps during World War II. Her first job on the Hill during the Manhattan Project was as a telephone operator, monitoring telegram and Teletype messages for Army intelligence. After her discharge from the Women's Army Corps in 1946, she remained at Los Alamos working as a civilian.

Darleane Hoffman

Darleane Hoffman achieved four firsts at the Laboratory, including being the first woman to lead the Isotope and Nuclear Chemistry Division.

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Darleane Hoffman achieved four firsts at the Laboratory: 1) the first woman to lead a scientific division at LANL (then LASL), when she was appointed to lead the Isotope and Nuclear Chemistry Division in 1979; 2) first woman on a "drill-back team" at the Nevada Test Site (teams that drilled into the post-shot nuclear debris from an underground nuclear test to collect samples for radiochemical analysis); 3) first woman to receive the Glenn T. Seaborg Award for Nuclear Chemistry (1983), and 4) first woman to be honored with the Los Alamos Medal (2014), the highest award given by the Lab. Her contribution to the science of actinide and transactinide elements, separation science, radiochemistry and nuclear chemistry spans more than 60 years. Methods she created for separating plutonium and the actinides became the basis for analyzing nuclear test debris and are currently used in the national security community (including at LANL) for programs in nonproliferation and treaty verification. Her work in radiochemistry in the test program contributed significantly to the understanding of nuclear weapons performance and generated experimental data that are still used to validate and improve weapons codes. Her observation in fermium isotopes of enhanced symmetric mass division, a form of spontaneous fission that results in two daughter nuclei nearly equal in mass, led to the revision of fission theories.

Earle Marie Hanson

Earle Marie Hanson was the first female division leader of an engineering division.

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Earle Marie Hanson joined the Laboratory in 1976 after receiving a doctorate in chemistry from MIT. She made many significant contributions to weapons engineering, including weapons materials development, gas transfer system development and serving as section leader, deputy group leader and group leader for the Weapons Subsystems Group. She was the first female division leader of an engineering division, the Engineering Science Applications Division (1999–2003), a division of approximately 900 full-time employees. Other achievements include serving as project leader for Special Weapons Material, project leader for Advanced Gas Transfer Systems, lead laboratory office director to support DOE, architect engineer for Complex 21 Design (planning for a modernized DOE weapons complex) and deputy program director for the Nuclear Materials and Stockpile Management Program Office.

Jill Trewhella

Jill Trewhella was named the first female Laboratory Fellow in 1995.

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Jill Trewhella was named the first female Laboratory Fellow in 1995 after coming to Los Alamos in 1984 to launch a biological neutron scattering program. The Fellows organization comprises technical staff members who have been appointed by the Laboratory director in recognition of their sustained outstanding contributions and exceptional promise for continued professional achievement. Fellows are limited to 2 percent of the Laboratory's technical staff. Trewhella's research focuses on the use of chemistry, physics and computational methods to study biomolecular structures as a basis for understanding their functions. Upon naming her leader of the Lab's Bioscience Division in 2000, then Lab Director John Browne said, "Jill is one of those unique scientists who come along only about once every decade, who combine their passion for science with their excellence in research and their leadership skills to make a true difference in an organization."
[Note: There have since been 10 more female Lab Fellows named at Los Alamos: Michelle Thomsen (1997), Merri Wood-Schultz (2001), Bette Korber (2002), Carol J. Burns (2003), Jane E. (Beth) Nordholt (2006), Joyce Guzik (2006), Antoinette (Toni) Taylor (2009), Brenda Dingus (2011), Cheryl Kuske (2013) and Jaqueline Kiplinger (2014).]

Carolyn Mangeng

Carolyn Mangeng was the first female deputy Laboratory director (acting) from 2003 to 2006.

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Carolyn Mangeng was the first female deputy Laboratory director (acting) from 2003 to 2006. She had previously been the associate deputy director of National Security and deputy associate director of Nuclear Weapons at the Laboratory. As deputy associate director for the Nuclear Weapons Directorate, she shared responsibility for the directorate's line management as well as management of the $1 billion nuclear weapons program at Los Alamos. She had specific oversight of weapon maintenance, certification, component manufacturing and surveillance, and for interactions with the Department of Defense concerning the nuclear weapons stockpile.

Sue Seestrom

Sue Seestrom was the first woman named Senior Fellow at the Laboratory.

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Sue Seestrom was the first woman named Senior Fellow at the Laboratory. Appointments as Senior Fellows, made at the discretion of the Laboratory director, are reserved for individuals who have brought great distinction to themselves and the Laboratory through outstanding and sustained performance in basic research, applied research, technology development and/or engineering, and have become recognized authorities in their fields of endeavor. Seestrom was associate director for Experimental Physical Sciences at Los Alamos from 2006 to 2012 and associate director for Weapons Physics from 2004 through 2006. Her research in nuclear physics ranges from studies of nuclear structure with medium energy probes to studies of the weak interaction using neutrons. She initiated research using ultra-cold neutrons (UCN) that culminated in a world-leading UCN source at Los Alamos and the first measurement of the beta asymmetry in neutron decay using UCN. She currently works in the Physics Division (P-DO).

Bette Korber

Bette Korber was the first female E.O. Lawrence Award winner at Los Alamos, receiving the award in 2004.

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Bette Korber was the first female E.O. Lawrence Award winner at Los Alamos, receiving the award in 2004 for her studies delineating the genetic characteristics of the HIV virus and for her development of the Los Alamos HIV database, a foundation for HIV research for the scientific community. The E.O. Lawrence Award honors U.S. scientists and engineers, at mid-career, for exceptional contributions in research and development supporting DOE and its mission. Her work at Los Alamos focuses on the human immune response to HIV infection and HIV evolution. Korber is also a Laboratory Fellow and was named in 2014 to the Thomson Reuters list of “The World’s Most Influential Scientific Minds.” Korber currently works in T-6.

Karissa Sanbonmatsu

Karissa Sanbonmatsu was the first Laboratory woman to receive the Presidential Early Career Award in Science and Engineering.

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Karissa Sanbonmatsu was the first woman at the Laboratory to receive the Presidential Early Career Award in Science and Engineering in 2005. The award is the highest honor bestowed by the U.S. government on outstanding scientists and engineers in the early stages of their independent research careers. Karissa’s research currently involves researching how DNA is reprogrammed during life, the missing link on how genes are switched on and off and how the gigantic RNA molecules affect the switches. In 2012, Karissa and her team published the first structure of such a molecule. She currently works in T-6.
[Note: Other female Presidential Early Career Award recipients at Los Alamos include Jennifer S. Martinez (2007), Evgenya I. Simakov (2010) and Amy Clarke (2011).]

Patti Buntain

Patti Buntain is the first female manager of a Life Extension Program at Los Alamos.

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Patti Buntain is the first female manager of a Life Extension Program at Los Alamos. Buntain earned a degree in mechanical engineering from the University of New Mexico and has held a number of positions in the Laboratory's Weapons Program. She currently manages LANL's Life Extension Program. In 2014, she received the Order of the Nucleus Award from the U.S. Air Force. The Order of the Nucleus Award is given to individuals, both military and civilian, who have made a significant contribution to the Air Force nuclear enterprise. She currently works in W-15.

Nancy Jo (NJ) Nicholas

Nancy Jo Nicholas is the first woman to hold the associate director position in Threat Reduction/Global Security.

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Nancy Jo Nicholas is the first woman to hold the associate director position in Threat Reduction/Global Security, a position she currently holds. The Institute of Nuclear Materials Management (INMM) elected Nancy Jo Nicholas of the Global Security Nuclear Nonproliferation and Security Program Office (NNS) to the rank of Fellow in recognition of her distinguished contributions to the field of nonproliferation and nuclear security. A member of the Laboratory since 1990, Nicholas has been the director of the Nuclear Nonproliferation and Security Program Office and division leader of the Nuclear Nonproliferation Division. Nicholas is the vice chair of the board of directors and founding board member of the Vienna-based World Institute for Nuclear Security. She served a two-year term as president of the Institute for Nuclear Materials Management. Her technical field of expertise is nondestructive assay measurements.

To read more stories of inspiring women at Los Alamos National Laboratory, go to Women Who Inspire. More information on the national Women's History organization can be found here: www.nwhp.org/.